Moinuddin Hassan, Ph.D

Lab. of Integrative and Medical Biophysics
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Educational Qualification:

2001 Received Doctor of Philosophy (Ph.D) in Physiology from University of Tokyo Medical and Dental University. Tokyo, Japan
Specific field of research: Thermal properties of skin.

1996 Research student, Department of Instrumentation Engineering, Institute of Biomaterials and Bioengineering, Tokyo Medical & Dental University. Tokyo, Japan

Specific field of research: Infrared imaging technique is used to visualize thermal properties of skin by reflection measurement.

1993 Received Master of Science (M.Sc) from Physics department, University of Dhaka, Bangladesh. Major Field of study: Medical Physics.

Research dissertation: 3D visualisation using a two-imensional electrical impedance tomography (EIT) system.

1991 Received Bachalor of Science (B.Sc) from Physics department, University of Dhaka, Bangladesh.

Major field of study: Physics

Experience and Training:

Oct.1993 to June1994: Research fellow in a project entitled “Development of non-invasive test to assess gastric acid output in children” of Internation certer for diarrhoeal disease research, Bangladesh (ICDDR,B).

July 1994 to May1995: Senior research fellow in a project of Ministry of Science & Technology, Government of Bangladesh. The project entitled " 3D visualization using a two dimensional electrical impedance tomography (EIT) system and its application in clinical use.

June1995 to Dec 1995: Scientific officer in the division of Nuclear medicine, Bangladesh Atomic Energy Commission.

Jan 1996 to Mar. 1997: Research student in the department of Instrumentation Engineering, Tokyo Medical & Dental University, 2-3-10 Kanda Surugadai, Chiyoda-Ku, Tokyo 101-0062, Japan.

April 1997 to March 2001: Research / Teaching assistance and Ph.D. student, Department of Instrumentation Engineering, Tokyo Medical & Dental University, 2-3-10 Kanda Surugadai, Chiyoda-Ku, Tokyo 101-0062, Japan.

Nov 2001 to cont.: Post-doctoral fellow. Lab of Integrative and Medical Biophysics, National Institute of Child Health and Human Development (NICHD), National Institutes of Health (NIH), Bethesda, Maryland 20892, USA.

Job description: Research included multi-spectral imaging medical application of laser technology, thermal imaging and fluorescent imaging,

Computer Knowledge:

Image processing using a matlab and C programming language in both windows and Unix OS.

Honour:

1998: Prize for the winner of the student paper competition of JpCOMPEmbs98 organized by IEEE Tokyo Chapter.

Jan 1996 to March 2001: Scholarship awarded from Ministry of Education, Science, Sports and Culture, Japan for Ph.D., Tokyo Medical &

Dental University, Department of Instrumention Engineering.

1991 to 1993: Student merit scholarship recipient for Master of Science (MS), University of Dhaka, Bangladesh.

Professional Societies: Member, The Institute of Electrical and Electronics Engineers (IEEE)

Meetings and Presentation

Date & Place

1996 17th Japan Symposium on Thermo-Physical Properties, Tsukuba, Japan.

1998 20th Annual Internation conference of IEEE/EMBS, HongKong.

1998 7th Conference of the Japan Society of Medical electronics and Biological Engineering, Kurashiki, Japan.

1999 2nd Asia Pacific Federation of Thermology, Japan.

1999 Conference of the Japanese Society for Non-Destructive Inspection, Tsukuba, Japan.

2000 World Congress on Medical Physics and Biomedical Engineering, Chicago, USA.

2000 39th Conference of the Japan Society of Medical electronics and Biological Engineering, Tokyo, Japan.

2002 24th Annual International Conference of the BMES and second joint meeting of BMES/EMBS, Houston, Texas, USA

2003 Photonics west, San Jose, Califonia, USA

2003 7th International Conference on Malignancies in AIDS and Other Immunodeficiencies: Basic, Epidemiologic and Clinical Research. Bethesda, Maryland, USA

2004 OSA Biomedical Optics Topical Meetings, Miami Beach, Florida.

2004 26th Annual International Conference IEEE EMBS, San Francisco, CA, USA, Infrared Imaging Workshop, September 1.

2004 26th Annual International Conference IEEE EMBS, San Francisco, CA, USA, Clinical Infrared Imaging, September 3.

BIBLIOGRAPHY:

Book Chapter

1. Hassan M, Chernomordik V., Vogel A., Hattery D., Gannot I., Yarchoan R. and Gandjbakhche A. "Infrared imaging for tissue characterization and function". Chapter 16, Biomedical Engineering Handbook, Vol. 3, 2005, In press.

List of Original Scientific Publications:

1. Sviridov A, Chernomordik V, Hassan M, Russo A, Smith P and Gandjbakhche A. "Enhancement of hidden structures of early skin fibrosis using polarization degree patterns and Pearce correlation analysis". Journal of Biomedical Optics, 2005 In press.
2. Sviridov A, Chernomordik V, Hassan M, Russo A, Eidsath A, Smith P, and Gandjbakhche A." Intensity profiles of linearly polarized light backscattered from skin and tissue-like phantoms" Journal of Biomedical Optics, 2005, In press.
3. Hassan M., Klaunberg B., "Biomedical application of fluorescence imaging in vivo", Comparative Medicine, Vol 56(6), pp 635-644, 2005.
4. Hassan M, Little R, Vogel A, Aleman K, Wyvill K, Yarchoan R and Gandjbakche A " Use of noninvasive imaging techniques to assess tumor vasculature and response to therapy in Kaposi's sarcoma" Technol Cancer Res Treat, Vol. 3(5), pp 451-457, 2004.
5. Gandjbakche A, Chernomordik V, Hattery D, Hassan M and Gannot I. "Tissue characterization by quantitative optical imaging methods" Technol Cancer Res Treat Vol. 2 (6), pp537-551, 2003.
6. Otsuka K, Okada S, Hassan M and Togawa T, "Imaging of skin thermal properties with estimation of ambient radiation temperature", IEEE EMBS magazine, Vol 21(6), pp 49-55, 2002.
7. Togawa T, Otsuka K, Hassan M,"Measurement of thermal properties of skin", Biocybernetics and Biomedical Engineering, Vol 22(4), pp 55-68, 2002.
8. Hassan M and Togawa T. "Observation of skin thermal inertia distribution during reactive hyperaemis using a single-hood measurement system, Physiological Measurement". Vol. 22, pp 187-200, 2001.
9. Hassan M, Kimura Y, Asai A, Shimase A, Okada S, Tsuchiya K and Togawa T, "Application of thermalgraphy for the imaging of thermal properties of skin", Bio-medical thermology. Vol. 19(4), pp 2-6, 1999.
10. Otsuka K, Hassan M, Shimase S, Saito H, Kimura Y and Togawa T. "Imaging of

skin thermal properties by step change in ambient radiation". Report of the institute of Biomaterials and Bioengineering. Vol. 33, pp 50-55, 1999.

11. Sarkar S A, Mahalanabis D, Bardhan P K, Alam N H, Rabbani K S, Kiber A, Hassan M, Islam S, Fuchs G J and Gyr K, " Noninvasive assessment of gastric acid secretion in man. Application of Electrical Impedance Tomography (EIT).",Digestive Diseases & Science, Vol 42(8), pp 1804-1809, 1997.
12. Rabbani K S, Hassan M and Kiber A, "3D object localization using EIT measurements at two levels" Physiological. Measurement, Vol. 17 pp. 189-199, 1996.
13. Rabbani KS, Hassan M, Hossain F, Kiber A, Kabir A B M H, Ahmed M and Nahar S. "Electrical impedance imaging of the human body". Research publication of the Bose Center for advance study and research in nuclear science. Dhaka University. Vol. 1. pp 74-91. 1995.

Proceedings:

1. M Hassan, D Hatteryy, A Vogel, V Chernomordik, S Demos, K Aleman, R Little, R Yarchoan, A Gandjbakhche, "Noninvasive infrared imaging for quantitative assessment of tumor vasculature and response to therapy" Proceedings of 25th annual international conference of IEEE EMBS, San Francisco, California, USA, pp 1200-1202, 2004
2. M Hassan, D Hatteryy, A Vogel, V Chernomordik, S Demos, K Aleman, R Little, R Yarchoan, A Gandjbakhche "Multi-modality imaging techniques to assess angiogenesis associated with Kaposi's sarcoma." Proceedings of OSA Biomedical Optics Tropical Meeting, Maimi, Florida, USA, CDROM, Abstract no. FH 5, 2004
3. M Hassan, D Hattery, V Chernomordik, K Toda, K Fukuhara, D Mittal, J Rowan, J Shah, L Gerber, R Dionne, I Kopin, and A Gandjbakhche, "Infrared thermographic imaging for the assessment of temperature asymmetries in reflex sympathetic dystropy" Proceedings of 25th annual international conference of IEEE EMBS Cancun, Mexico, pp 1102-1104. 2003
4. M Hassan, D Hattery, A Vogel, V Chernomordik, F Hekmat, K Aleman, K Wyvill, L Merced, R Little, R Yarchoan and A H Gandjbakhche. Multi-modality imaging techniques to assess Kaposi's Sarcoma associated with angiogenesis. Proceedings of 7th International Conference on Malignancies in AIDS and Other Immunodeficiencies: Basic, Epidemiologic and Clinical Research, Bethesda, MD, USA, 2003. pp 22, 2003
5. M. Hassan, D Hattery, A Vogel, V Chernomordik, F Hekmat, K Aleman, K Wyvill, L Merced, R Little, R Yarchoan and A H Gandjbakhche. Multi-modality imaging techniques to study angiogenesis associated with Kaposi's Sarcoma. Second joint meeting EMBS/BMES conference, Houston, TX, USA pp 1139-40, 2002
6. D Hattery, M Hassan, V Chernomordik, J Mulshine and A Gandjbakhche. Measuring oral inflammation in vivo with diffuse reflectance spectroscopy. Sarcoma.

Second joint meeting EMBS/BMES conference, Houston, TX, USA, pp 2243-44, 2002

7. M Hassan, K Otsuka, A Shimase, S Okada, and T Togawa. Imaging of thermal inertia to visualize reactive hyperemia in the forearm skin after arterial occlusion. Proceedings of IEEE EMBS/ BMES World Congress, Chicago, USA. Vol.2000., 2000
8. M Hassan, K Otsuka, A Shimase, S Okada, and T Togawa. Wavelength dependence of in –vivo skin emissivity. Proceeding of the 39 conference of the Japan society of Medical electronics and Biological engineering, pp 469, 2000.
9. Y Kimura, M Hassan, H Saito, K Otsuka and T Togawa. Imaging system of emissivity and thermal inertia. Proceedings of the Japanese Society for Non-Destructive Inspection (JSNDI) No. 010-040.pp 23-27. 1999.
10. M Hassan, Y. Kimura, A. Asai, A. Shimase, S. Okada, K. Tsuchiya and T. Togawa, "Application of thermalgraphy for the imaging of thermal properties of skin", 2nd Conference of the Asia Pacific Federation of Thermaology, pp.9. 1999.
11. Y. Kimura, A Asai, M. Hassan, A. Shimase, S. Okada, K. Tsuchiya and T. Togawa. "Imaging of skin thermal properties by step change in ambient radiation temperature ---Proposing new electrical control system of ambient radiation temperature", Proceeding of the 38 conference of the Japan society of Medical electronics and Biological engineering, pp 145, 1999.
12. M. Hassan, Y. Kimura, A. Asai, A. Shimase, M. Fukuoka and T. Togawa, "Imaging of skin thermal properties by changing ambient radiation temperature --An electrical control system for stepwise change in ambient radiation temperature.", Proceedings of 20th Annual International Conference of IEEE/EMBS (HongKong), Vol. 20, No.2 pp.936-939. 1998.
13. A. Asai, Y. Kimura, A. Shimase, M. Hassan, K. Tsuchiya and T. Togawa, "Imaging of skin thermal properties by changing ambient radiation temperature --Electrical control system for stepwise change of ambient radiation temperature." Proceedings of the 37th SICE annual conference, pp 139-140, 1998.
14. M. Hassan, Y. Kimura, A. Asai, A. Shimase, H.Saito and T. Togawa, "Imaging of skin thermal properties by step change in ambient temperature--Technique for simultaneous measurement of skin properties and ambient temperature.", Proceeding of the 37 conference of the Japan society of Medical electronics and Biological engineering, pp 636, 1998.
15. A. Asai, Y. Kimura, H. Seshimo, M, Hassan, H. Saito, T. Togawa and K. Tsuchiya, "Noninvasive measurement of skin thermal properties by using capacitor discharge system", Proceedings of the 36 conference of the Japan society of Medical electronics and Biological engineering, pp 602, 1997
16. M. Hassan, Y. Kimura, H. Seshimo, A. Asai and T. Togawa, " Measurement of skin thermal properties using stepwise change in ambient temperature by capacitor system", Proceeding of the Seventeenth Japan Symposium on Thermo-physical Properties, pp. 159-162. 1996.
17. K. S. Rabbani, M. Hassan, A.B.M.H Kabir, M. Ahmed and S Nah "Electrical Impedance Tomography (EIT) in frontal plane using ring electrode configuration", Proceedings of RC IEEE/EMBS & 14th BMESI (India). pp. 1.43-1.44,1995